

ARMSTRONG FLIGHT RESEARCH CENTER DEPLOYED OPERATIONS SITUATION REPORT #5

MISSION: DC-8 PECAN Deployment

LOCATION: Salina, KS

REPORT DATE: 7/7/2015

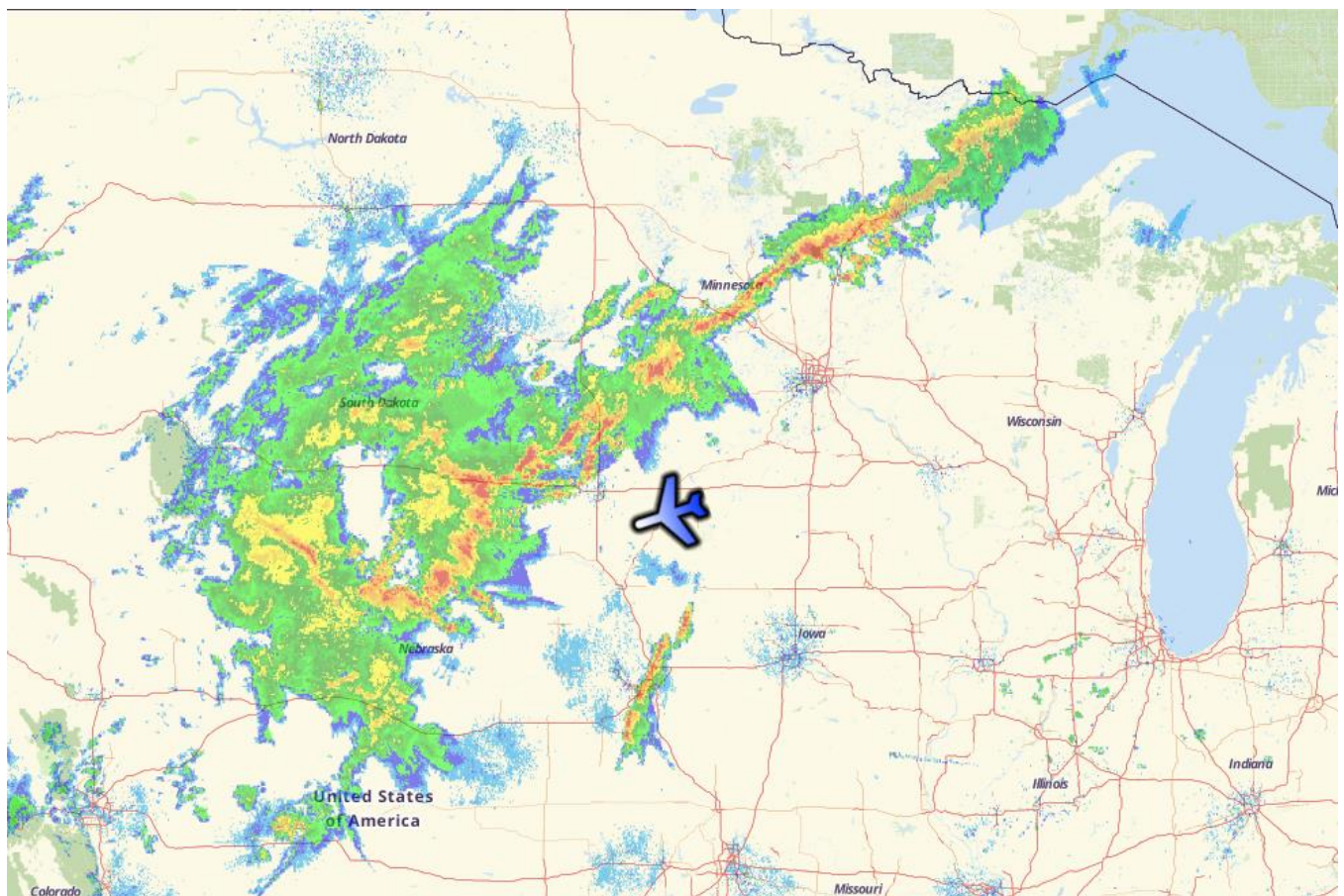
REPORT BY: Moes

LATEST MISSIONS: Dates: 7/5 & 7/6

Mission: Plains Elevated Convection At Night (PECAN) Science Flight

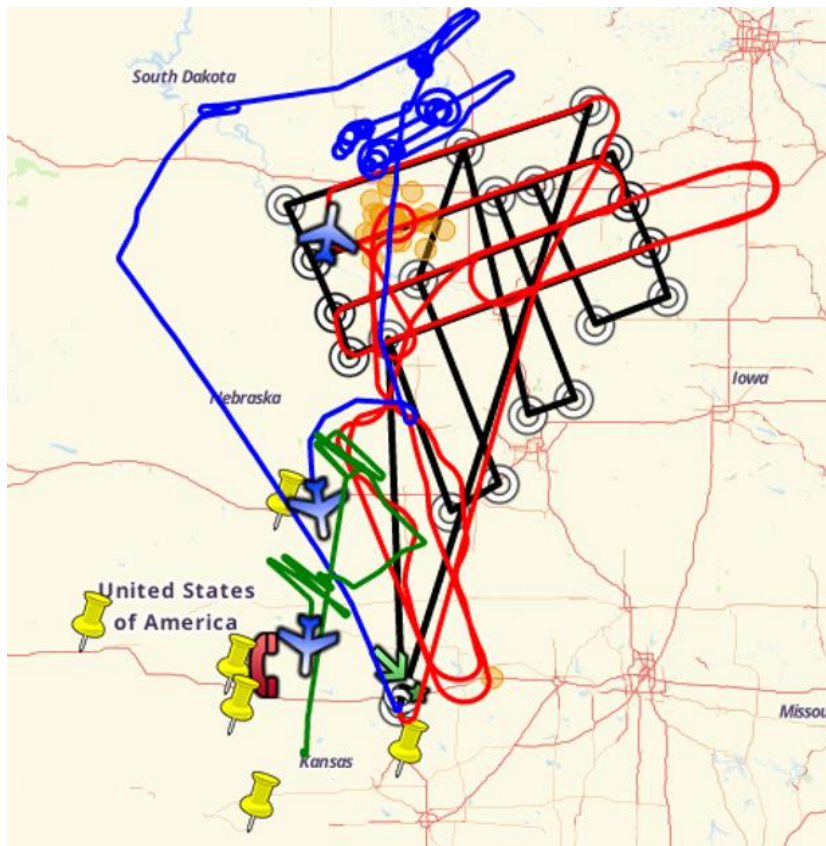
Summary: The PECAN project has conducted two successful science flights since the last Sit Rep. A lot of great science data has been obtained. The NAST-I instrument is still in a troubleshooting mode. However, the only Go/NoGo instrument, LASE, and secondary instruments, RainCube and MASC, are all performing well.

The flight on July 5 was 8.2 hours and was highly productive for Mesoscale Convective Systems (MSC) and Bore Disturbance measurements. We also conducted a series of flight lines for the RainCube instrument over precipitation in coordination with a mobile ground RADAR providing “truth” data.



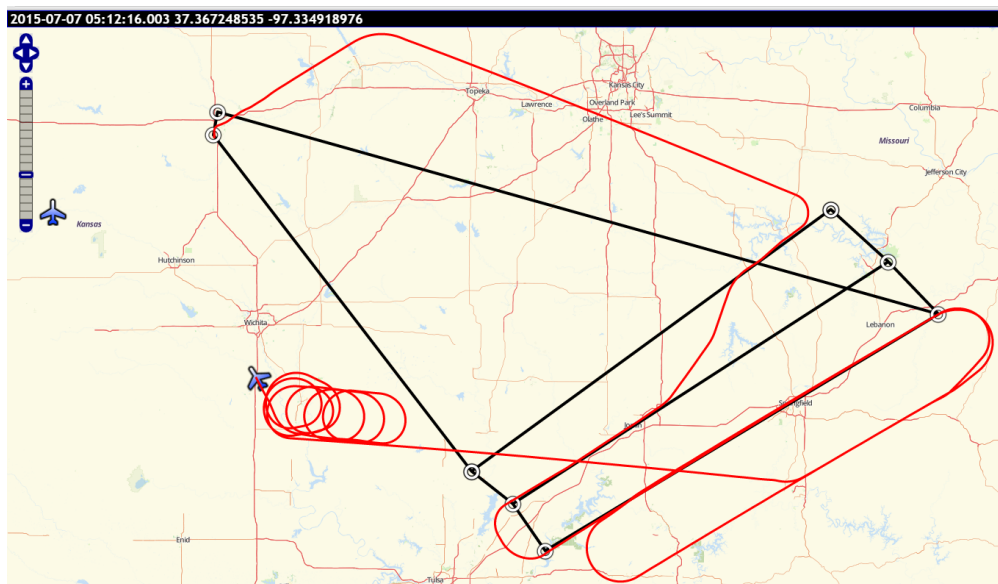
Not only do our pilots have a modern WX RADAR on-board the aircraft, but the aircraft receives uploads of the NexRAD ground-based RADAR network to get a great birds-eye view of the convective system that we are studying. I didn't think to get a good screen-capture of it, but later in the flight we got a good view of what was considered, by the science team, to be a “Bore Disturbance” generated

small convective system. We were able to monitor the growth of that storm cell while the aircrew plotted a course to avoid it. The NOAA P-3 and University of Wyoming King Air were also in the air on July 5 and the flight tracks from all 3 aircraft are shown below



DC-8 Red, P-3 Blue, and King Air Green. All with good altitude separation! The original DC-8 flight plan is shown in Black. As standard, we adjust the flight plan real-time as the weather dictates (and ATC approves).

The mission on July 6 was 4.7 hours and focused on studying MCS and RainCube RADAR measurements of precipitation. The P-3 and King Air did not participate in this mission. The ground track is shown here



The multiple 360 degree turns at the end of the mission were to support the RainCube objective as we were tracking the movement of a significant precipitation generator. Another great shot of NexRAD storm data was taken as we were running NorthEast to SouthWest lines for MCS science as shown here



TODAY: Hard Down Day - No activity at the aircraft (and no interesting weather phenomena were forecast)

NEXT MISSION: Date: Planning for July 8

Mission Objectives: Options include Mesoscale Convective Systems (MCS), Convective Initiation (CI), Bore Disturbance Missions. Decision is made at 1600L on day of flight.

STATUS:

Aircraft: GREEN ... continuing to monitor the main gear Door Manual Open Valve for hydraulic leaks. We have the replacement part if needed.

Payload:

- | | |
|-------------|--|
| 1. LASE | GREEN |
| 2. NAST-I | RED ... still troubleshooting inoperative instrument |
| 3. RainCube | GREEN |
| 4. MASC | GREEN |

Personnel Issues: None

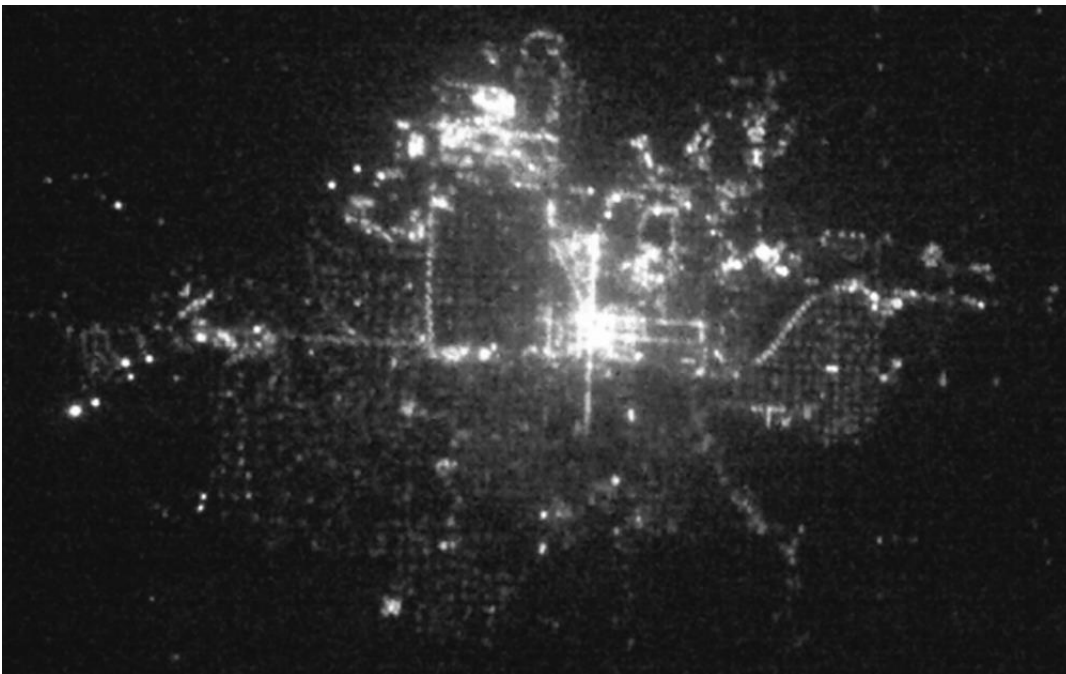
Logistics Issues: None

Other: On schedule to arrive back in Palmdale on July 16 at approximately 1100 PDT

NASA airborne science tracker: <http://airbornescience.nasa.gov/tracker/>

DEPLOYMENT MISSION SUMMARY TO DATE:

Mission Description	Mission Date	Flight#	Pilot/FE Crew	Takeoff	Duration hrs	Hours Left
Instrument Check Flight	6/24/2015	1020	Slover/Brockett/Sandon/Antimisarias, Owens, Proett	0805 PDT	1.5	58.7
Deploy to Salina, KS	6/28/2015	1022	Slover/Brockett/Elit/Owens/Klein	1316 PDT	2.6	56.1
Night Proficiency	6/28/2015	1023	Slover/Brockett/Elit	2130 CDT	0.7	55.4
Science	6/30/2015	1024	Brocket/Slover/Elit/Owens/Pugh	2102 CDT	6.9	48.5
Science	7/4/2015	1025	Slover/Brockett/Elit/Pugh/Klein	2121 CDT	4.1	44.4
Science	7/5/2015	1026	Brocket/Slover/Elit/Owens/Pugh	1953 CDT	8.2	36.2
Science	7/6/2015	1027	Slover/Brockett/Elit/Pugh/Klein	1957 CDT	4.7	31.5
				Total	15.8	



A gorgeous nighttime photo taken from the DC-8 Nadir camera of Austin, MN, home of SPAM and hometown of the DC-8 Mission Manager! (July 5, 2015)